Articles + Publications | February 10, 2025

Navigating the Solar Industry’s Path Through Tariffs and Growth

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In 2024, the solar energy generation industry experienced its largest-ever annual rise globally, fueled by China’s 44% solar output boost from January to November 2024.[1] Solar energy output also continues to expand domestically, with the U.S. generating approximately 283 terawatt-hours in 2024, comprising a 14.7% share of the global market. In fact, domestically, solar energy now accounts for more than half of all new electricity on the grid, and, with a continued focus on renewable energy, is projected to continue to grow.[2]

The industry’s growth has been fueled by decreasing costs of solar panels, improvements in solar technology, and supportive government policies. However, like other global industries, solar power relies on a globalized supply chain. Many of the components and materials necessary to manufacture photovoltaic solar cells (PV cells) — the key component of solar panels that convert sunlight to electricity — originate overseas. China dominates the manufacturing and export of these components. However, China has recently expanded its production chains into surrounding countries like Malaysia, Vietnam, and Thailand. The U.S. relies heavily on the import of these components to produce solar panels domestically.

Given the substantial reliance on imported materials by U.S. providers of solar power, tariffs have naturally played a consistent role in dictating the growth of the U.S. solar industry. Tariffs, however, are nothing new and players in the solar industry have had to navigate tariffs and other restrictions on the import of necessary materials for years. Beginning in 2012, the Obama administration first set duties of roughly 36% on the import of Chinese solar cells and panels. Over the following decade-plus, foreign suppliers of PV cells and other necessary components have engaged in a constant push-and-pull with U.S.-imposed tariffs. The first Trump administration imposed Section 201 tariffs on imported solar cells and modules in January 2018 for a period of four years. The Biden administration then extended and modified the existing safeguard tariffs for an additional four years in February 2022.[3]

When U.S. administrations, working with the Office of the U.S. Trade Representative have raised tariffs, domestic suppliers have often accused foreign firms of bypassing these tariffs by employing new methods of supply or locations of export to continue to grow their global solar market share.[4] The more impactful of these cases was brought by Auxin Solar in February 2022, in which the California-based solar panel manufacturer submitted a petition to the U.S. Department of Commerce, alleging that Chinese solar manufacturers were circumventing antidumping and countervailing duty (AD/CVD) orders in place against Chinese-origin solar cells and modules by building portions of the components in Cambodia, Malaysia, Thailand, and Vietnam. The case led to significant disruptions in solar development cycles as a large share of projects were unable to confidently project capital expenditures during the pendency of the litigation.

More recently, the Biden administration took steps to improve the domestic solar supply chain. In September 2024, President Biden announced a $40 million investment across the domestic solar supply chain to improve the life cycle of photovoltaic solar systems and to boost the global competitiveness of U.S. manufacturing.[5] Further, effective January 1, 2025, Biden announced a doubling of tariffs on polysilicon and solar wafers, key components of solar cells, being imported from China.[6] Perhaps most impactfully, the Inflation Reduction Act includes both (i) a domestic content bonus credit, which enhances the investment tax credit and production tax credit for otherwise qualifying projects that meet certain domestic sourcing requirements,[7] and (ii) the Section 45X Advanced Manufacturing Production Tax Credit for the production in the U.S. and sale to unrelated persons of eligible components.[8]

As the new administration takes office, it is uncertain what policies may be continued or newly implemented to boost the solar industry and renewable energy generally. However, President Trump has foreshadowed the enactment of more trade policies to protect U.S. interests and, potentially, to boost domestic manufacturing. These include imposing tariffs as high as 60% on imports from China and 10% on all other goods coming into the U.S.[9] On February 1, 2025, Trump provided a look into how these future tariffs may take shape, announcing 25% tariffs on Mexico and Canada, with a lesser 10% tariff for Canadian crude oil, and a 10% tariff on China.[10] Although details of which specific industries will face increased tariffs is likely to come more into focus as the tariffs are implemented, foreign components critical to the solar industry are unlikely to be spared.

Beyond tariffs and duties, outright import restrictions and/or prohibitions on the incorporation of equipment in the bulk power electric grid are conceivable. In 2019 and 2020, the first Trump administration issued a pair of executive orders prohibiting the acquisition and installation of "bulk-power system electric equipment" supplied by foreign adversaries (including China) and persons subject to their control.[11] The orders were ultimately largely revoked[12] under the Biden administration, but until then created significant confusion among the solar development community about the extent to which Chinese equipment was permitted to be incorporated into utility-scale projects.

The Biden administration, however, continued the trend in some respects, first with the Hoshine Withhold Release Order[13], and then with the passage and implementation of the Uyghur Forced Labor Prevention Act, each targeting goods (including solar panels) tainted by compulsory labor in western China for exclusion from entry into the U.S. The Biden administration named several Chinese solar vendors to the UFLPA blacklist[14], and the Trump administration appears poised to continue to make use of the blacklist[15]. An escalation of the trend of excluding Chinese equipment from the U.S. energy supply chain could have a destabilizing effect on certain projects that cannot simply be absorbed into project economics the way at least some level of tariffs can be. Here again, the onshoring of supply chains, and nimble advocacy and procurement practices may help mitigate the disruption.

It remains to be seen whether additional tariffs will be imposed and how such tariffs may promote or disrupt domestic production of solar cells and emerging supply chains.[16] In the short term, the prospect of additional tariffs presents the U.S. solar industry with a potentially challenging landscape, considering the current gap between U.S. solar module manufacturing capacity and the availability of domestic solar cells, wafers, ingots, and polysilicon. However, opportunities also come with a potential continued focus on promoting domestic U.S. manufacturing. The solar industry has demonstrated a decades-old track record of adaptability and continues to drive the growth of renewable energy in the U.S. Companies in the solar industry should closely track developing policies and regulations as the new administration takes office.

Troutman Pepper Locke continues to monitor these developments and are here to help you navigate this quickly evolving landscape. If you have further questions or seek advice based on your specific situation, please reach out to the authors or any member of our Construction practice.

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